PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	**FOR FURTHER ACTION** See Form PCT/IPEA/416	
International application No. PCT/GB2005/000974	International filing date *(day/month/year)* 15.03.2005	Priority date *(day/month/year)* 15.03.2004
International Patent Classification (IPC) or national classification and IPC INV. G01C21/36 B60K35/00 B60K37/02		
Applicant TOMTOM B.V. et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 2 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☒	Box No. VII	Certain defects in the international application
☒	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
13.01.2006	21.06.2006
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Springer, O Telephone No. +49 89 2399-2619

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/GB2005/000974

Box No. I Basis of the report

1. With regard to the **language**, this report is based on

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3(a) and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4(a))
   - ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1, 2, 4-19	as originally filed
3	received on 19.01.2006 with letter of 13.01.2006

Claims, Numbers

1-6	received on 19.01.2006 with letter of 13.01.2006

Drawings, Sheets

1/8-8/8	as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1 to 6
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1 to 6
Industrial applicability (IA)	Yes:	Claims	1 to 6
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V: Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.

1. Technical Field:

The invention relates to a GPS navigation system.

2. Independent Claims:

Claim 1 (apparatus).

3. State of the Art:

The following documents have been considered for the purposes of this report:

D1: US-A-2003/208314; ROBERT BOSCH GMBH; 6 November 2003
D2: WO-A-01/29514; MAGELLAN DIS., INC.; 26 April 2001
D3: US-A-2003/034756; RONG-CHUN CHANG; 20 February 2003
D4: DE-A-199 59 307; I. WUELLNER; M. HEFFNER; 12 April 2001
D5: US-B1-6 505 121; HEWLETT-PACKARD COMPANY; 7 January 2003
D6: WO-A-00/65308; W. FINK ET AL; 2. November 2000

4. Novelty - Article 33(2) PCT

The present application does satisfy the criterion set forth in Article 33(2) PCT, because the subject-matter of claims 1 to 6 is new in respect of the prior art as defined in the regulations (Rule 64(1)-(3) PCT) for the following reasons:

4.1 Claims 1 to 6:

Document D6, which is considered as closest prior art, shows (see e.g. p. 4, l. 16 to p. 10, l. 21 and figures 1 to 4 and the references in parentheses applying to this document) a portable GPS navigation system (see the title and reference number 1) that is programmable with map data and a navigation application (see e.g. p. 9, line 20 to p. 10, l. 21 and fig. 1, 2). The navigation system comprises a dock (2) comprising a suction mount (16) for removably connecting the dock to the car windscreen (see e.g. p. 4, l. 23-27; p. 7, l. 4-9 and fig. 1, 4). The navigation system further includes an external RF connector (6) for connecting an external GPS antenna (see e.g. p. 6, l. 1-5 and fig. 2).

The subject-matter of independent claim 1 differs from the closest prior art D6 in, that the dock comprises a RF connector to automatically interface with the RF connector in the device. Thus, the subject-matter of independent claim 1 and claims 2 to 6 that are dependent on claim 1 is new.

5. Inventive Step - Article 33(3) PCT

The present application does not satisfy the criterion set forth in Article 33(3) PCT, because the subject-matter of claims 1 to 6 does not involve an inventive step (Rule 65(1), (2) PCT) for the following reasons:

5.1 Independent claim 1:

The RF connector in the dock that automatically interface with the RF connector in the device solves the objective technical problem to easily dock or remove the portable navigation device without having to plug or unplug the cable of the external antenna in addition.

However, as it is stated in the description of the present application, such RF connectors integrated in the dock are well known for mobile phones (see the description, p. 2, l. 9-15 and p. 3, l. 16-17). They are not only popular for mobile phones but also very well known in the field of portable navigation systems. Documents D1 and D2, for example, describe such docks comprising RF connectors (see e.g. D1: page 2, paragraph 20; p. 4, par. 31 or D2: p. 2, l. 2-12; p. 3, l. 29 to p. 4, l. 9 and fig. 1, 5). Such integrated docks are also known from document D3 (see e.g. p. 2, paragraph 15; p. 4, par. 69; p. 5, par. 74 and fig. 2). Thus, the skilled person who wants to ease the docking of the navigation device would consider the teaching of the prior art and would arrange the external antenna socket of the device such that it would interface with an integrated plug of the dock without being inventive. The subject-matter of independent claim 1 is not inventive.

5.2 Dependent claims 2 and 6:

The subject-matter of dependent claims 2 and 6 is known from document D1 (see e.g. p. 4, par. 69 to p. 5, par. 74 and fig. 2) and thus not inventive.

5.3 Dependent claims 3, 4 and 5:

The subject-matter of dependent claims 3, 4 and 5 is disclosed in document D3 (see e.g. p. 4, par. 69 to p. 5, par. 74 and fig. 2) that describes a docking station for a

portable GPS navigation system comprising a RF connector and a rotatably, vertically and horizontally movable platform. Consequently, the subject-matter of claims 3, 4 and 5 also lacks an inventive step.

6. Industrial Applicability - Article 33(4) PCT

The invention as claimed in claims 1 to 6 is obviously industrially applicable in the field of GPS navigation systems.

Re Item VII: Certain defects in the international application

Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT concerning document D6.

The features of the claims are not provided with reference signs placed in parentheses Rule 6.2(b) PCT).

Documents D1, D2, D3 and D6 are not identified in the description and the relevant background art disclosed therein is not discussed (Rule 5.1(a)(ii) PCT).

Re Item VIII: Certain observations on the international application

Dependent claim 6 is unclear as it is directed to the navigation device in combination with the dashboard or windscreen. Claim 6 should have been deleted.

SUMMARY OF THE INVENTION

In a first aspect, there is a GPS navigation system comprising a dock in combination with a portable GPS navigation device, in which the device is programmable with map data and a navigation application that enables a route to be planned between two user-defined places, wherein the dock comprises:

(a) a RF connector designed to automatically interface with a RF connector in the device in order to feed RF signals from an external aerial to the device when the device is correctly mounted on the dock and

(b) a suction mount that enables the dock to be removably connected to a car windscreen..

As noted earlier, RF signals from an external aerial are conventionally routed along a co-axial cable that is plugged directly into the navigation device. This means that a user has to first dock the device and then hook up the RF cable. This can be inconvenient. But with the present invention, a user merely has to dock the navigation device onto the platform for an automatic connection to any external aerial connected to the dock to be made. There is no need to laboriously plug in a RF cable directly into the navigation device. Although superficially a small step, and one known from other fields such as mobile telephone docking systems, the realisation that the mobile telephone design approach of extreme simplicity of installation is also applicable to GPS navigation system design runs counter to the established design bias in this field. Yet it is precisely this kind of thinking that is fundamental to turning the GPS navigation system from a technophile's device to one with very widespread appeal.

The dock may comprise a platform that is rotatably mounted on an arm, the device being removably attached to the platform. The arm itself may then be pivotally mounted so that the platform can be moved vertically and horizontally. Docking the device onto the platform is very straightforward; the user merely has to move the device so that its base engages a lip on the platform; the user then rolls the device backwards, rotating it about the region where base and lip are touching. The lip is shaped to guide the device into correct alignment and engagement with the dock. The device then sits firmly on the platform, with the RF connectors on platform and device in good contact.

CLAIMS

1. A GPS navigation system comprising a dock in combination with a portable GPS navigation device, in which the device is programmable with map data and a navigation application that enables a route to be planned between two user-defined places, wherein the dock comprises:

(a) a RF connector designed to automatically interface with a RF connector in the device in order to feed RF signals from an external aerial to the device when the device is correctly mounted on the dock;

(b) a suction mount that enables the dock to be removably connected to a car windscreen.

2. The GPS navigation system of Claim 1 wherein the RF signals are GPS signals.

3. The GPS navigation system of Claim 1 or 2 in which the dock comprises a platform that is rotatably mounted on an arm, the device being removably attached to the platform.

4. The GPS navigation system of Claim 3 in which the arm is pivotally mounted so that the platform can be moved vertically and horizontally.

5. The GPS navigation system of any preceding claim comprising a lip about which the device is designed to rotate when being mounted onto the dock, the lip being shaped to guide the device into correct alignment and engagement with the dock.

6. The GPS navigation system of any preceding Claim when mounted on a vehicle dashboard or windscreen.